



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,166	01/15/2002	Erich Fuchs	Mo-6608/LeA 34,892	1859
157	7590	05/21/2004	EXAMINER	
BAYER POLYMERS LLC 100 BAYER ROAD PITTSBURGH, PA 15205			LEE, RIP A	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450
www.uspto.gov

MAILED
MAY 20 2004
GROUP 1700

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 05132004

Application Number: 10/053,166
Filing Date: January 15, 2002
Appellant(s): FUCHS, ERICH

Jennifer R. Seng
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed April 5, 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-8 and 11 stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,985,392	Hert et al.	11-1999
EP 933 381	Fujii et al.	08-1999

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,985,392 to Hert *et al.* in view of EP 0 933 381 to Fujii *et al.*

The present invention is drawn to a rubber mixture, a vulcanizable rubber mixture, and a molding, each comprising: (a) one or more carboxylated nitrile rubbers, (b) one or more metal salts of an acrylate, (c) one or more liquid acrylates optionally applied onto a support, (d) from 0.01-8 phr of one or more silanes, and optionally (e) further additives/fillers.

Example 4 of Hert *et al.* discloses a rubber composition comprising: carboxylated nitrile rubber, zinc acrylate, 2 pw of silane, silica, and peroxide to effect crosslinking. Thus, one sees that the rubber composition is vulcanizable. Hert *et al.* uses the term "zinc acrylate," instead of "zinc diacrylate," as recited in the present claims, however, in view of the fact that zinc is divalent and acrylate is monoanionic, the skilled artisan would find it obvious that the two terms are synonymous. Regarding the vulcanization accelerator component, the reference teaches use of ZnO, but it does not teach use of one or more liquid acrylates.

The prior art of Fujii *et al.* relates to vulcanized carboxylated nitrile rubber compositions. The inventors explain that zinc oxide is an effective accelerator when employed with sulfur as the crosslinking agent. However, where peroxides are used, polyfunctional compounds such as ethylene glycol dimethacrylate, trimethylolpropane trimethacrylate, and polyethylene glycol dimethacrylate are crosslinking agents of choice (see page 9, paragraph [0072]).

Since peroxides are used to cure the carboxylated nitrile rubber compositions in Hert *et al.*, one of ordinary skill in the art, having read both references, would have found it obvious to use polyfunctional crosslinking co-agents in the composition of Hert *et al.*, and the skilled artisan would have expected such an embodiment to work. One would be motivated to modify the art because Fujii *et al.* teaches and suggests that said polyfunctional crosslinking agents, rather than ZnO, are to be used with peroxide crosslinking agents. The combination is obvious because both inventions relate to carboxylated nitrile rubber compositions.

(11) Response to Argument

Regarding the factual details set forth in the rejection, Applicants primary argument hinges on the notion that a *prima facie* case of obviousness does not exist. Contrary to Applicant's view, a *prima facie* case of obviousness was made according to the guidelines set forth in *In re Vaeck*, 947 F.2d 488, 20 USPQ 1438 (Fed. Cir. 1991).

First, there is strong suggestion, and hence, strong motivation to use liquid acrylates described in Fujii *et al.* in the composition of Hert *et al.* As elucidated above, Fujii *et al.* clearly teaches use of liquid acrylates such as ethylene glycol dimethacrylate, trimethylolpropane trimethacrylate, and polyethylene glycol dimethacrylate when peroxides are used as crosslinking agent. In contrast, ZnO is reserved for compositions cured with sulfur. Following this teaching or suggestion, one having ordinary skill in the art would glean that use of peroxide crosslinking agent with ZnO accelerant is not an effective combination. Therefore, one would be motivated to substitute the ZnO of Hert *et al.* with a liquid acrylate (as per Fujii *et al.*) in order to achieve crosslinking.

Despite Applicant's unsubstantiated claims that any logic for combining references is "backwards" and "counter-intuitive," one clearly sees that the motivation to combine references flows naturally and logically from the teachings of the prior art.

Secondly, a reasonable expectation of success does exist because Fujii *et al.* teaches the combination of liquid acrylates accelerant and peroxide curing agent. The skilled artisan need not despair that the liquid acrylates of Fujii *et al.* would be incompatible with the composition of Hert *et al.* because both references relate to methods of curing carboxylated nitrile rubber.

Thirdly, the combined prior art, indeed, teaches all claim limitations. No element of the rejection was culled from an undisclosed source or from Applicant's disclosure.

Therefore, it is maintained that a prima facie case of obviousness has been established properly.

Applicants also submit that the Shore Hardness D of the compositions of the present invention constitute unexpected results since they are much higher than those of the materials of the prior art. The examiner disagrees with this notion because no scientific or legal conclusion can be drawn from a comparison materials so variegated in composition. Whereas the base resin shown in Applicant's Table 2 is hydrogenated carboxylated nitrile rubber, Example 4 of Hert *et al.* uses ordinary carboxylated nitrile rubber. One having skill in the art would appreciate that the degree of hydrogenation limits the extent of crosslinking in, and ultimately, the Shore Hardness of the rubber material. Coupled with the fact that auxiliary agents in the compositions in question differ in identity and amount, there is no consecutive, back-to-back comparison of products from the closest prior art. As a result, that one material is harder than the other bears no significance in the Applicant's argument.

Applicant's closing statement is not entirely correct. According to Applicant, examiner's "flawed" proposal to substitute ZnO with liquid acrylate does not lead to the present invention because the result of such a substitution would be "a zinc oxide, liquid acrylate combination." Clearly, a substitution does not result in a combination, and therefore, Applicant's line of reasoning fails.

It is also noted that "one or more metal salts of an acrylate" is stressed in boldface type. The reason for this is not clear, however, it appears that Applicants believe that the prior art does not teach the use of one or more salts of an acrylate. Again, this is incorrect; Hert *et al.* meets this requirement by teaching a composition comprised of zinc acrylate. One notes that a liquid acrylate and an acrylate salt are not the same entities, but rather, they are two discrete components of the claimed composition.

Finally, regarding to Applicant's indication that Hert *et al.* teaches other ingredients (PEG and stearic acid), one notes that the present invention claims "optionally further additives," and PEG and stearic acid would qualify as such. Furthermore, the term "comprising" in the present claims does not exclude any unrecited components.

Art Unit: 1713

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Rip A. Lee
Examiner
Art Unit 1713



DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

ral
(571)272-1104
May 12, 2004

Conferees
David W. Wu



James J. Seidleck



Jennifer R. Seng
BAYER POLYMERS LLC
100 BAYER ROAD
PITTSBURGH, PA 15205